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EXAMINER

SIMONE, CATHERINE A

ART UNIT	PAPER NUMBER
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1794

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03/24/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/507,093	Applicant(s) RYDBERG, TOMMY	
	Examiner Catherine Simone	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 January 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Withdrawn Rejections

1. The 35 U.S.C. 112, second paragraph, rejection of claims 3-5 of record in the previous Office Action mailed 9/3/2008 has been withdrawn due to the Applicant's amendment filed 1/12/2009.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-4 and 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nordstrom (US 4,500,381) in view of Kirsch (US 5,772,111).

4. Regarding claim 1, Nordstrom teaches a packaging material of the corrugated cardboard type comprising a plane paper layer (Fig. 4, layer 20) and an auxiliary paper layer (Fig. 4, layer 16) arranged below the plane paper layer with waves presenting an amplitude perpendicular to a plane of propagation of the auxiliary paper layer, and a second plane paper layer (Fig. 4, layer 20) arranged below the auxiliary paper layer and a second auxiliary paper layer (Fig. 4, layer 16) arranged below the second plane paper layer and further a third plane paper layer arranged below the second auxiliary paper layer (Fig. 4, layer 20).

However, Nordstrom fails to specifically teach the tops of the waves forming a system of substantially parallel waves presenting an amplitude in the plane of propagation of the auxiliary paper layer and also the waves of the two auxiliary paper layers, which present an amplitude perpendicular to the direction of propagation of the two auxiliary paper layers, having a phase displacement between the waves of these layers in the range of $\pi/4$ to $\pi/3$.

Kirsch teaches a container structure made of paper including a corrugated medium having a plurality of longitudinal waves wherein the tops of the waves form a system of substantially parallel waves presenting an amplitude in the plane of propagation of the corrugated medium (Figs. 1B and 1C; Figs. 6 and 7) for the purpose of providing excellent thermal insulating characteristics as well as strength and rigidity to prevent longitudinal deformation, and resistance to folding and bending across the width of the container, and further provide the container with an enhanced inherent ease of gripping and with an outer layer highly receptive to high quality, low cost printing (col. 1, lines 47-53 and 61-63).

Nordstrom and Kirsch are analogous arts, since both teach containers being made of paper including corrugated mediums.

Thus, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to have modified the corrugated sheet of the multiply paperboard in Nordstrom to have the tops of the waves form a system of substantially parallel waves presenting an amplitude in the plane of propagation of the corrugated sheet as suggested by Kirsch in order to form a container having excellent thermal insulating characteristics as well as strength and rigidity to prevent longitudinal deformation, and resistance to folding and bending

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across the width of the container, and further provide the container with an enhanced inherent ease of gripping and with an outer layer highly receptive to high quality, low cost printing.

Furthermore, Nordstrom teaches offsetting a pair or more of the corrugated sheets/plies longitudinally one from the other so that their longitudinal end margins are offset from each other by an amount calculated to provide a splice joint for either a double ply or triple ply paperboard product (col. 6, lines 11-17 and 49-54). An ordinarily skilled artisan would have recognized using a phase displacement in the range of $\pi/4$ to $\pi/3$ between the waves of the corrugated sheets in Nordstrom was a workable option from these teachings in Nordstrom, since Nordstrom teaches offsetting a pair or more of the corrugated sheets/plies longitudinally one from the other so that their longitudinal end margins are offset from each other by an amount calculated to provide a splice joint for either a double ply or triple ply paperboard product. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the paperboard in Nordstrom to have the corrugated plies offset longitudinally one from the other providing a phase displacement in the range of $\pi/4$ to $\pi/3$ between the waves of the corrugated sheets in order to provide a sufficient splice joint for a container construction. Additionally, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the paperboard in Nordstrom to have the corrugated plies offset longitudinally one from the other providing a phase displacement in the range of $\pi/4$ to $\pi/3$ between the waves of the corrugated sheets, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art in absence of showing unexpected results. *MPEP 2144.05 (II)*.

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Regarding claim 2, Nordstrom fails to specifically teach the waves of the auxiliary layers being of a serrated shape, i.e. triangular waves, with tops or bottoms slightly rounded or of a square shape, i.e. square waves. It would have been an obvious matter of design choice to change the shape of the waves in Nordstrom, since such a modification would have involved a mere change in the shape of the waves. A change in shape is generally recognized as being within the level of ordinary skill in the art, absent unexpected results. MPEP 2144.04 (IV). One of ordinary skill in the art would have been motivated to change the waves of the auxiliary layers in Nordstrom to be either square shape or triangular shape in order to change the strength and rigidity of the paperboard. It is desirable to change the strength and rigidity of the paperboard in Nordstrom for a container construction in order to make the container more appealing to the consumer.

With regard to claim 3, the mathematical functional expression is a measurement method and/or condition which does not distinguish the claimed article to be different in a structural form than the presented prior art. While this limitation is being given consideration, the claims themselves are directed towards an article and not a method of how the article is being measured. The measurement method does not provide a difference of how the claimed article is different structurally than that presented by the prior art.

Furthermore with regard to claims 3, 4 and 7-9, the combination of Nordstrom and Kirsch fail to specifically teach the ratio a/b of the amplitudes for the two types of waves being in the range of 0.10 to 0.60, preferably 0.15 to 0.50, especially corresponding to $a = 0.5$ mm and $b = 2.25$ mm, and the ratio of λ_1/λ_2 of the wavelengths for the two types of waves being in the range of 0.09 to 0.20 and preferably being approximately 0.15 corresponding to $\lambda_1 = 3.5$ mm and $\lambda_2 =$

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23.5 mm. However, the combination of Nordstrom and Kirsch teach the structure of the presently claimed packaging material of cardboard as shown above. One of ordinary skill in the art would have recognized that using the specific ratios as recited in claims 3, 4 and 7-9 for the amplitude and wavelength would be a workable option from the teachings in both Nordstrom and Kirsch, since the combination of Nordstrom and Kirsch teach a paperboard packaging material having the same structure as that of the claimed packaging material, which is being used for the same purpose, i.e. packaging. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the structure of the packaging material taught by Nordstrom and Kirsch to have a ratio a/b of the amplitudes for the two types of waves being in the range of 0.10 to 0.60, preferably 0.15 to 0.50, especially corresponding to $a = 0.5$ mm and $b = 2.25$ mm, and the ratio of λ_1/λ_2 of the wavelengths for the two types of waves being in the range of 0.09 to 0.20 and preferably being approximately 0.15 corresponding to $\lambda_1 = 3.5$ mm and $\lambda_2 = 23.5$ mm in order to provide a strong and rigid packaging material. Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the structure of the packaging material taught by Nordstrom and Kirsch to have a ratio a/b of the amplitudes for the two types of waves being in the range of 0.10 to 0.60, preferably 0.15 to 0.50, especially corresponding to $a = 0.5$ mm and $b = 2.25$ mm, and the ratio of λ_1/λ_2 of the wavelengths for the two types of waves being in the range of 0.09 to 0.20 and preferably being approximately 0.15 corresponding to $\lambda_1 = 3.5$ mm and $\lambda_2 = 23.5$ mm, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art in absence of showing unexpected results. *MPEP 2144.05 (II)*.

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Regarding claim 6, note in Nordstrom a starch-based glue is used for the lamination of the layers (col. 3, lines 10-11).

5. Claims 5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nordstrom in view of Kirsch as applied to claims 1 and 2 above, and further in view of Goldstein et al. (US 3,290,205).

Nordstrom and Kirsch teach the presently claimed packaging material as shown above. However, Nordstrom fails to specifically teach the plane paper layers and the auxiliary paper layers being of the same thickness, preferably between 0.05 and 0.3 mm, such as 0.1 mm, and the auxiliary paper layers having a weight of 50 to 250 g/m². Goldstein et al. teach corrugated fiberboard for use in packaging having plane paper layers and corrugated paper layers being of the same thickness (Fig. 2), preferably between 0.05 and 0.3 mm (col. 15, lines 15-30), and the corrugated paper layers having a weight of 50 to 250 g/m² (col. 15, lines 27-30) for the purpose of forming paperboard having increased strength and rigidity and resistance to puncture (col. 6, lines 16-20). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the multi-ply paperboard in Nordstrom to have the plane paper layers and corrugated paper layers being of the same thickness, preferably between 0.05 and 0.3 mm, and the corrugated paper layers having a weight of 50 to 250 g/m² as suggested by Goldstein et al. in order to form a paperboard having increased rigidity and strength and an increased resistance to puncture. Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the thickness of the plane paper layers and the corrugated paper layers to be 0.1 mm thick, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable

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ranges involves only routine skill in the art in absence of showing unexpected results. *MPEP* 2144.05 (II).

Response to Arguments

6. Applicant's arguments filed 1/12/2009 have been fully considered but they are not persuasive.

Applicant argues “Nordstrom is only concerned with shifting the end margin by an amount to provide the splice joint. Nordstrom provides no teaching or suggestion of shifting the boards such that the waves which present an amplitude perpendicular to the direction of propagation of the two auxiliary paper layers have a phase displacement, ϕ being in the range of $\pi/4 - \pi/3$ ”.

This is not deemed persuasive. As previously shown in the 103 rejection, Nordstrom teaches offsetting a pair or more of the corrugated sheets/plies longitudinally one from the other so that their longitudinal end margins are offset from each other by an amount calculated to provide a splice joint for either a double ply or triple ply paperboard product (col. 6, lines 11-17 and 49-54). Thus, Nordstrom suggests a phase displacement between the waves, since the corrugated sheets are being longitudinally offset one from the other. Accordingly, an ordinarily skilled artisan would have recognized using a phase displacement in the range of $\pi/4$ to $\pi/3$ between the waves of the corrugated sheets in Nordstrom was a workable option due to the fact that Nordstrom teaches offsetting a pair or more of the corrugated sheets/plies longitudinally one from the other so that their longitudinal end margins are offset from each other by an amount calculated to provide a splice joint, which suggests a phase displacement between the waves.

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Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the paperboard in Nordstrom to have the corrugated plies offset longitudinally one from the other providing a phase displacement in the range of $\pi/4$ to $\pi/3$ between the waves of the corrugated sheets in order to provide a sufficient splice joint for a container construction. Additionally, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the paperboard in Nordstrom to have the corrugated plies offset longitudinally one from the other providing a phase displacement in the range of $\pi/4$ to $\pi/3$ between the waves of the corrugated sheets, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art in absence of showing unexpected results. *MPEP 2144.05 (II)*.

In view of the foregoing, independent claim 1 is unpatentable over Nordstrom in view of Kirsch.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Catherine Simone whose telephone number is (571) 272-1501. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on (571) 272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Catherine Simone/
Examiner, Art Unit 1794

/JENNIFER MCNEIL/
Supervisory Patent Examiner, Art Unit 1794